

## SEQUENCE LISTING

&lt;110&gt; SmithKline Beecham Biologicals S.A.

&lt;120&gt; Novel compounds

&lt;130&gt; BM45348

&lt;160&gt; 16

&lt;170&gt; FastSEQ for Windows Version 3.0

&lt;210&gt; 1

&lt;211&gt; 804

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 1

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atgaaaaaaaa ttcttttaac ggttttcatta ggttttggcac tgagtgcctg tgccactcaa      60
ggtacgggtcg ataaagatgc tcagattacc caagattgga gtgtggagaa gctctatgcc      120
gaagcccagg acgaattgaa cagcagcaat tatacgcggg ctgtcaagtt atacgaaatc      180
ttggaatcgc gcttccccac cagccgccat gcccggaat cccaactgga taccgcatac      240
gcctattata aagacgatga aaaagacaag gctctggcgg caatcgaacg cttccgccgc      300
ctccatccgc agcatccgaa tatggattac gcgctgtatc tgcgcggcctt ggtgctgttc      360
aacgaagacc agtccttctt gaacaaactg gcctcgcaag actggtccga ccgcgacccg      420
aaagccaacc gcgaagtaac ccaggcgctt gcggaactcg tccaacgctt cccaacagc      480
aaatacgccg ccgatgcgac cgcacgcatg gtcaaactgg tcgatgcact gggcggcaat      540
gaaatgtcgg tggcgcgcta ctacatgaaa cgcggcgcat atatcgccgc cgccaaccgc      600
gccccaaaaa ttatcggcag ctacaaaaat acacgctatg tcgaagaatc gctcgccatc      660
ttggaacttg cctacaaaaa actcggcaaa ccacagcttg ccgccgatac gcgccgcgtg      720
ttggaaacca acttcccgaa aagcccgctt ttgacgcacg cttggcagcc cgacgatatg      780
ccttggtggc gttactggca ttaa                                     804

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&lt;210&gt; 2

&lt;211&gt; 267

&lt;212&gt; PRT

<213> *Neisseria meningitidis*

&lt;400&gt; 2

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Met Lys Lys Ile Leu Thr Val Ser Leu Gly Leu Ala Leu Ser Ala
  1             5             10             15
Cys Ala Thr Gln Gly Thr Val Asp Lys Asp Ala Gln Ile Thr Gln Asp
          20             25             30
Trp Ser Val Glu Lys Leu Tyr Ala Glu Ala Gln Asp Glu Leu Asn Ser

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WO 00/42191

PCT/EP00/00135

35 40 45  
 Ser Asn Tyr Thr Arg Ala Val Lys Leu Tyr Glu Ile Leu Glu Ser Arg  
 50 55 60  
 Phe Pro Thr Ser Arg His Ala Arg Gln Ser Gln Leu Asp Thr Ala Tyr  
 65 70 75 80  
 Ala Tyr Tyr Lys Asp Asp Glu Lys Asp Lys Ala Leu Ala Ala Ile Glu  
 85 90 95  
 Arg Phe Arg Arg Leu His Pro Gln His Pro Asn Met Asp Tyr Ala Leu  
 100 105 110  
 Tyr Leu Arg Gly Leu Val Leu Phe Asn Glu Asp Gln Ser Phe Leu Asn  
 115 120 125  
 Lys Leu Ala Ser Gln Asp Trp Ser Asp Arg Asp Pro Lys Ala Asn Arg  
 130 135 140  
 Glu Val Thr Gln Ala Phe Ala Glu Leu Val Gln Arg Phe Pro Asn Ser  
 145 150 155 160  
 Lys Tyr Ala Ala Asp Ala Thr Ala Arg Met Val Lys Leu Val Asp Ala  
 165 170 175  
 Leu Gly Gly Asn Glu Met Ser Val Ala Arg Tyr Tyr Met Lys Arg Gly  
 180 185 190  
 Ala Tyr Ile Ala Ala Ala Asn Arg Ala Gln Lys Ile Ile Gly Ser Tyr  
 195 200 205  
 Gln Asn Thr Arg Tyr Val Glu Glu Ser Leu Ala Ile Leu Glu Leu Ala  
 210 215 220  
 Tyr Gln Lys Leu Gly Lys Pro Gln Leu Ala Ala Asp Thr Arg Arg Val  
 225 230 235 240  
 Leu Glu Thr Asn Phe Pro Lys Ser Pro Phe Leu Thr His Ala Trp Gln  
 245 250 255  
 Pro Asp Asp Met Pro Trp Trp Arg Tyr Trp His  
 260 265

&lt;210&gt; 3

&lt;211&gt; 1404

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 3

atggatacta cattgaaaac caccttgact tctggttgag cagccttcgc attatccgcc 60  
 tgcaccatga ttccccaata cgagcagccc aaagtcgaag ttgccgaaac gtttaaaaac 120  
 gataccgccg acagcggcat ccgtgcggtc gatttaggtt ggcatgacta ttttgccgac 180  
 ccgcgcctgc aaaagctgat cgacatcgca ctcgagcgca ataccagttt gcgtaccgcc 240  
 gtattgaaca gcgaaatcta ccgcaaacia tacatgattg agcgcaacia cctcctgccc 300  
 acgcttgccg ccaatgcgaa cggctcgcgc caaggcagct tgagcggcgg caatgtcagc 360  
 agcagctaca atgtcggact ggggtcggca tcttacgaac tcgacctgtt cggacgcgtc 420  
 cgcagcagca gcgaagcagc actgcaaggc tattttgcaa gtgtcgccaa ccgcgatgcg 480  
 gcacatttga gcctgattgc caccgttgcc aaagcctatt tcaacgaacg ttatgccgaa 540  
 gaagcgatgt ctttggcgca gcgtgttttg aaaacgcgcg aggaaacctt caagctgtcc 600  
 gaattacgtt acaaggcagg cgtgatttcc gccgtcgcgc tacgtcagca ggaagccctg 660

WO 00/42191

PCT/EP00/00135

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atcgaatctg ccaaagccga ttatgccc at gccgcgcgca gccgcgaaca ggcgcgcaat 720
gccttgga ccttgattaa ccaaccgata cccgaagacc tgcctgccgg tttgccgctg 780
gacaagcagt tttttgttga aaaactgccg gccggtttga gttccgaagt attgctcgac 840
cgtcccgaata tccgtgctgc cgaacacgcg ctcaaacagg caaacgccaa tatcggtgcg 900
gcacgcgcgc cctttttccc atccatccgc ctgaccggaa ccgtcgggtac gggttctgcc 960
gaattgggtg ggttggttcaa aagcggcacg gccgttttgt cgttcgcgcc gtctattacc 1020
ctgccgattt ttacctgggg tacgaacaaa gccaaccttg atgtagccaa gctgcgccaa 1080
caggcacaaa tcgttgcccta tgaagccgcc gtccaatccg catttcaaga cgtggcaaac 1140
gcattggcgg cgcgcgagca gctggataaa gcctatgacg ctttaagcaa acaaagccgc 1200
gcctctaaag aggcgttgcg cttggtcggc ctgcgttaca agcacggcgt atccggcgcg 1260
ctcgacttgc tcgatgcgga acgcagcagc tatgcggcgg aggtgctggc tttgtcggca 1320
caactgaccc gcgccgaaaa ccttgccgat ttgtacaagg cactcggcgg cggattgaaa 1380
cgggataccc aaaccgacaa ataa 1404

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&lt;210&gt; 4

&lt;211&gt; 467

&lt;212&gt; PRT

<213> *Neisseria meningitidis*

&lt;400&gt; 4

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Met Asp Thr Thr Leu Lys Thr Thr Leu Thr Ser Val Ala Ala Ala Phe
1          5          10          15
Ala Leu Ser Ala Cys Thr Met Ile Pro Gln Tyr Glu Gln Pro Lys Val
20          25          30
Glu Val Ala Glu Thr Phe Lys Asn Asp Thr Ala Asp Ser Gly Ile Arg
35          40          45
Ala Val Asp Leu Gly Trp His Asp Tyr Phe Ala Asp Pro Arg Leu Gln
50          55          60
Lys Leu Ile Asp Ile Ala Leu Glu Arg Asn Thr Ser Leu Arg Thr Ala
65          70          75          80
Val Leu Asn Ser Glu Ile Tyr Arg Lys Gln Tyr Met Ile Glu Arg Asn
85          90          95
Asn Leu Leu Pro Thr Leu Ala Ala Asn Ala Asn Gly Ser Arg Gln Gly
100          105          110
Ser Leu Ser Gly Gly Asn Val Ser Ser Ser Tyr Asn Val Gly Leu Gly
115          120          125
Ala Ala Ser Tyr Glu Leu Asp Leu Phe Gly Arg Val Arg Ser Ser Ser
130          135          140
Glu Ala Ala Leu Gln Gly Tyr Phe Ala Ser Val Ala Asn Arg Asp Ala
145          150          155          160
Ala His Leu Ser Leu Ile Ala Thr Val Ala Lys Ala Tyr Phe Asn Glu
165          170          175
Arg Tyr Ala Glu Glu Ala Met Ser Leu Ala Gln Arg Val Leu Lys Thr
180          185          190
Arg Glu Glu Thr Tyr Lys Leu Ser Glu Leu Arg Tyr Lys Ala Gly Val
195          200          205
Ile Ser Ala Val Ala Leu Arg Gln Gln Glu Ala Leu Ile Glu Ser Ala

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210 215 220  
 Lys Ala Asp Tyr Ala His Ala Ala Arg Ser Arg Glu Gln Ala Arg Asn  
 225 230 235 240  
 Ala Leu Ala Thr Leu Ile Asn Gln Pro Ile Pro Glu Asp Leu Pro Ala  
 245 250 255  
 Gly Leu Pro Leu Asp Lys Gln Phe Phe Val Glu Lys Leu Pro Ala Gly  
 260 265 270  
 Leu Ser Ser Glu Val Leu Leu Asp Arg Pro Asp Ile Arg Ala Ala Glu  
 275 280 285  
 His Ala Leu Lys Gln Ala Asn Ala Asn Ile Gly Ala Ala Arg Ala Ala  
 290 295 300  
 Phe Phe Pro Ser Ile Arg Leu Thr Gly Thr Val Gly Thr Gly Ser Ala  
 305 310 315 320  
 Glu Leu Gly Gly Leu Phe Lys Ser Gly Thr Gly Val Trp Ser Phe Ala  
 325 330 335  
 Pro Ser Ile Thr Leu Pro Ile Phe Thr Trp Gly Thr Asn Lys Ala Asn  
 340 345 350  
 Leu Asp Val Ala Lys Leu Arg Gln Gln Ala Gln Ile Val Ala Tyr Glu  
 355 360 365  
 Ala Ala Val Gln Ser Ala Phe Gln Asp Val Ala Asn Ala Leu Ala Ala  
 370 375 380  
 Arg Glu Gln Leu Asp Lys Ala Tyr Asp Ala Leu Ser Lys Gln Ser Arg  
 385 390 395 400  
 Ala Ser Lys Glu Ala Leu Arg Leu Val Gly Leu Arg Tyr Lys His Gly  
 405 410 415  
 Val Ser Gly Ala Leu Asp Leu Leu Asp Ala Glu Arg Ser Ser Tyr Ala  
 420 425 430  
 Ala Glu Gly Ala Ala Leu Ser Ala Gln Leu Thr Arg Ala Glu Asn Leu  
 435 440 445  
 Ala Asp Leu Tyr Lys Ala Leu Gly Gly Gly Leu Lys Arg Asp Thr Gln  
 450 455 460  
 Thr Asp Lys  
 465

&lt;210&gt; 5

&lt;211&gt; 420

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 5

atgaaaaaac ttctaataatgat aaccctcacc ggtatgcttg cagcttggtgc aacaggtgtc 60  
 aatgtcggcc ggttgatggt tgaaatgccg cagggagaac gttctgtcgt tgtgcaggtt 120  
 cccgcgacaa ataaccgcgt ttccgatacg gtagctgtcg gaatgattaa aacatccggt 180  
 tcgccttcgg catcaaatat gattgaaatg ctcggcgcg acaatatcaa cgtcggcgtg 240  
 gtgggaagca gccaaatgct taataaggcg accgcacttt attccttaaa ccatgcaaag 300  
 aaagtcggaa ataatgtcag tgtttatatg atgggcgaca gcgaaagtga caaggccgat 360  
 ttggaaaacg cggcaaatgc caaaaatatc aaattgcatt atttctttaa caaaaataa 420

WO 00/42191

PCT/EP00/00135

<210> 6  
 <211> 139  
 <212> PRT  
 <213> *Neisseria meningitidis*

<400> 6  
 Met Lys Lys Leu Leu Met Ile Thr Leu Thr Gly Met Leu Ala Ala Cys  
 1 5 10 15  
 Ala Thr Gly Val Asn Val Gly Arg Leu Met Val Glu Met Pro Gln Gly  
 20 25 30  
 Glu Arg Ser Val Val Val Gln Val Pro Ala Thr Asn Asn Pro Leu Ser  
 35 40 45  
 Asp Thr Val Ala Val Gly Met Ile Lys Thr Ser Gly Ser Pro Ser Ala  
 50 55 60  
 Ser Asn Met Ile Glu Met Leu Gly Ala Asp Asn Ile Asn Val Gly Val  
 65 70 75 80  
 Val Gly Ser Ser Gln Met Leu Asn Lys Ala Thr Ala Leu Tyr Ser Leu  
 85 90 95  
 Asn His Ala Lys Lys Val Gly Asn Asn Val Ser Val Tyr Met Met Gly  
 100 105 110  
 Asp Ser Glu Ser Asp Lys Ala Asp Leu Glu Asn Ala Ala Asn Ala Lys  
 115 120 125  
 Asn Ile Lys Leu His Tyr Phe Phe Asn Gln Lys  
 130 135

<210> 7  
 <211> 516  
 <212> DNA  
 <213> *Neisseria meningitidis*

<400> 7  
 atgaaaatca aacaaatcgt caaaccgggc ttggcagtat tggcggcggg cgttctgtct 60  
 gcctgcgcaa ccaaaagcaa cgtcaaagcc gacggaacga ccgacaatcc ggttttcccg 120  
 aaaccctatt ccgtaacgct cgacaacaat cgcggtacat tcccgcaccta tgacgaattg 180  
 gacttgatgc gtcccgtct gaccaaagac gacatctaca aaatcctggg tcgtccgcat 240  
 tacgacgaag gtatgtacgg cgtgcgcgaa tgggattatc tgttccactt ccacaccccg 300  
 ggcgtaggca tcgaccctga aaacacttcc ggcgtagaag gcattaccac ctgtcaatac 360  
 aaaattatct tcgataaaga caaatttgcc cgcagcttct actggaaccc cgtcttcccg 420  
 aaagatgccg cctgtccgcc gcccgacccc aaagccgagc cgcaagtcac catccgcgaa 480  
 atcgtgcccc ccaaaccxaa acgcatccgc caataa 516

<210> 8  
 <211> 171  
 <212> PRT  
 <213> *Neisseria meningitidis*

&lt;400&gt; 8

Met Lys Ile Lys Gln Ile Val Lys Pro Gly Leu Ala Val Leu Ala Ala  
 1 5 10 15  
 Gly Val Leu Ser Ala Cys Ala Thr Lys Ser Asn Val Lys Ala Asp Gly  
 20 25 30  
 Thr Thr Asp Asn Pro Val Phe Pro Lys Pro Tyr Ser Val Thr Leu Asp  
 35 40 45  
 Asn Asn Arg Gly Thr Phe Pro Thr Tyr Asp Glu Leu Asp Leu Met Arg  
 50 55 60  
 Pro Gly Leu Thr Lys Asp Asp Ile Tyr Lys Ile Leu Gly Arg Pro His  
 65 70 75 80  
 Tyr Asp Glu Gly Met Tyr Gly Val Arg Glu Trp Asp Tyr Leu Phe His  
 85 90 95  
 Phe His Thr Pro Gly Val Gly Ile Asp Pro Glu Asn Thr Ser Gly Val  
 100 105 110  
 Glu Gly Ile Thr Thr Cys Gln Tyr Lys Ile Ile Phe Asp Lys Asp Lys  
 115 120 125  
 Phe Ala Arg Ser Phe Tyr Trp Asn Pro Val Phe Pro Lys Asp Ala Ala  
 130 135 140  
 Cys Pro Pro Pro Ala Pro Lys Ala Glu Pro Gln Val Ile Ile Arg Glu  
 145 150 155 160  
 Ile Val Pro Ala Lys Pro Lys Arg Ile Arg Gln  
 165 170

&lt;210&gt; 9

&lt;211&gt; 816

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 9

atgagaccat atgctactac catttatcaa ctttttattt tgtttattgg gagtgttttt 60  
 actatgacct catgtgaacc tgtgaatgaa aagacagatc aaaaagcagt aagtgcgcaa 120  
 caggctaaag aacaaaccag tttcaacaat cccgagccaa tgacaggatt tgaacatacg 180  
 gttacatttg attttcaggg caccaaaatg gttatcccct atggctatct tgcacggtat 240  
 acgcaagaca atgccacaaa atggctttcc gacacgcccg ggcaggatgc ttactccatt 300  
 aatttgatag agattagcgt ctattacaaa aaaaccgacc aaggctgggt tcttgagcca 360  
 tacaaccagc aaaacaaagc acactttatc caattttctac gcgacgggtt ggatagcgtg 420  
 gacgatattg ttatccgaaa agatgcgtgt agtttaagta cgactatggg agaaagattg 480  
 ctactttacg gggttaaaaa aatgccatct gcctatcctg aatacgaggc ttatgaagat 540  
 aaaagacata ttctgaaaaa tccatatttt catgaatttt actatattaa aaaaggagaa 600  
 aatccggcga ttattactca tcggaataat cgaataaacc aaactgaaga agatagttat 660  
 agcactagcg taggttctctg tattaacggt ttcacggtac agtattaccc gttttattcgg 720  
 gaaaagcagc agctcacaca gcaggagttg gtaggttatc accaacaagt agagcaattg 780  
 gtacagagtt ttgtaaacia ttcaaataaa aaataa 816

&lt;210&gt; 10

&lt;211&gt; 271

WO 00/42191

PCT/EP00/00135

&lt;212&gt; PRT

<213> *Neisseria meningitidis*

&lt;400&gt; 10

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Met Arg Pro Tyr Ala Thr Thr Ile Tyr Gln Leu Phe Ile Leu Phe Ile
 1           5           10           15
Gly Ser Val Phe Thr Met Thr Ser Cys Glu Pro Val Asn Glu Lys Thr
          20           25           30
Asp Gln Lys Ala Val Ser Ala Gln Gln Ala Lys Glu Gln Thr Ser Phe
          35           40           45
Asn Asn Pro Glu Pro Met Thr Gly Phe Glu His Thr Val Thr Phe Asp
          50           55           60
Phe Gln Gly Thr Lys Met Val Ile Pro Tyr Gly Tyr Leu Ala Arg Tyr
65           70           75           80
Thr Gln Asp Asn Ala Thr Lys Trp Leu Ser Asp Thr Pro Gly Gln Asp
          85           90           95
Ala Tyr Ser Ile Asn Leu Ile Glu Ile Ser Val Tyr Tyr Lys Lys Thr
          100          105          110
Asp Gln Gly Trp Val Leu Glu Pro Tyr Asn Gln Gln Asn Lys Ala His
          115          120          125
Phe Ile Gln Phe Leu Arg Asp Gly Leu Asp Ser Val Asp Asp Ile Val
          130          135          140
Ile Arg Lys Asp Ala Cys Ser Leu Ser Thr Thr Met Gly Glu Arg Leu
145          150          155          160
Leu Thr Tyr Gly Val Lys Lys Met Pro Ser Ala Tyr Pro Glu Tyr Glu
          165          170          175
Ala Tyr Glu Asp Lys Arg His Ile Pro Glu Asn Pro Tyr Phe His Glu
          180          185          190
Phe Tyr Tyr Ile Lys Lys Gly Glu Asn Pro Ala Ile Ile Thr His Arg
          195          200          205
Asn Asn Arg Ile Asn Gln Thr Glu Glu Asp Ser Tyr Ser Thr Ser Val
          210          215          220
Gly Ser Cys Ile Asn Gly Phe Thr Val Gln Tyr Tyr Pro Phe Ile Arg
225          230          235          240
Glu Lys Gln Gln Leu Thr Gln Gln Glu Leu Val Gly Tyr His Gln Gln
          245          250          255
Val Glu Gln Leu Val Gln Ser Phe Val Asn Asn Ser Asn Lys Lys
          260          265          270

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&lt;210&gt; 11

&lt;211&gt; 717

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 11

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atgaagacca aattaccgct ttttatcatt tggctgtccg tatccgccc ctgttcttcc      60
cctgtttccc gcaatattca ggatatgcgg cccgaaccgc aggcagaggc aggtagtccg      120

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WO 00/42191

PCT/EP00/00135

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gacgctattc cctatcccg tccactctg caagaccggt tggattatct ggaaggcaca      180
ctcgtccgcc tgtcgaacga agtggaaacc ttaaaccgga aagtcaaagc actggagcat      240
gcgaaaacac acccttccgg tagggcatac gtccaaaaac tcgacgaccg caagttgaaa      300
gagcattacc tcaataccga aggcggcagc gcatccgcac ataccgtcga aaccgcacaa      360
aacctctaca atcaggcact caaacactat aaaagcggca ggttttctgc cgcagccgcc      420
ctgttgaaag gcgcggacgg aggcgacggc ggcagcatcg cgcaacgcag tatgtacctg      480
ttgctgcaaa gcagggcgcg tatgggcaac tgcgaatccg tcatcgaaat cggagggcgt      540
tacgccaacc gtttcaaaga cagcccaacc gcgccgaag ccatgttcaa aatcggcgaa      600
tgccaataca gggtgcagca gaaagacatt gcaagggcaa cttggcgag cctgatacag      660
gcttaccoga gcagcccgcc ggcaaacgc gccgccgag ccgtacgcaa acgatag      717

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&lt;210&gt; 12

&lt;211&gt; 238

&lt;212&gt; PRT

<213> *Neisseria meningitidis*

&lt;400&gt; 12

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Met Lys Thr Lys Leu Pro Leu Phe Ile Ile Trp Leu Ser Val Ser Ala
 1              5              10              15
Ala Cys Ser Ser Pro Val Ser Arg Asn Ile Gln Asp Met Arg Pro Glu
      20              25              30
Pro Gln Ala Glu Ala Gly Ser Ser Asp Ala Ile Pro Tyr Pro Val Pro
      35              40              45
Thr Leu Gln Asp Arg Leu Asp Tyr Leu Glu Gly Thr Leu Val Arg Leu
      50              55              60
Ser Asn Glu Val Glu Thr Leu Asn Gly Lys Val Lys Ala Leu Glu His
      65              70              75              80
Ala Lys Thr His Pro Ser Gly Arg Ala Tyr Val Gln Lys Leu Asp Asp
      85              90              95
Arg Lys Leu Lys Glu His Tyr Leu Asn Thr Glu Gly Gly Ser Ala Ser
      100              105              110
Ala His Thr Val Glu Thr Ala Gln Asn Leu Tyr Asn Gln Ala Leu Lys
      115              120              125
His Tyr Lys Ser Gly Arg Phe Ser Ala Ala Ala Ala Leu Leu Lys Gly
      130              135              140
Ala Asp Gly Gly Asp Gly Gly Ser Ile Ala Gln Arg Ser Met Tyr Leu
      145              150              155              160
Leu Leu Gln Ser Arg Ala Arg Met Gly Asn Cys Glu Ser Val Ile Glu
      165              170              175
Ile Gly Gly Arg Tyr Ala Asn Arg Phe Lys Asp Ser Pro Thr Ala Pro
      180              185              190
Glu Ala Met Phe Lys Ile Gly Glu Cys Gln Tyr Arg Leu Gln Gln Lys
      195              200              205
Asp Ile Ala Arg Ala Thr Trp Arg Ser Leu Ile Gln Ala Tyr Pro Ser
      210              215              220
Ser Pro Ala Ala Lys Arg Ala Ala Ala Ala Val Arg Lys Arg
      225              230              235

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WO 00/42191

PCT/EP00/00135

&lt;210&gt; 13

&lt;211&gt; 1176

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 13

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gtgtttaaag tgaaatttta tattcgtcac gcagtattat tattgtgtgg aagttaaatt      60
gtaggatgct ctgcgattcc ttcacaggc cccagcgcaa aaaaaattgt ctctttaggg      120
caacaatctg aagttcaaat tcctgaagtg gagctgattg atgtgaatca tacggttgct      180
cagttattat ataaggctca gataaatcag tcattcactc agtttggcga tggttatgct      240
tcggctggta cgctaaatat tggatgatga ttggatatta tgatttggga agcgccgccg      300
gcagtattgt ttggtggtgg cctttcttcg atgggctcgg gtagtgcgca tcaaactaag      360
ttgccagagc agttggtcac ggcacgtggt acggtttctg tgccgtttgt tggcgatatt      420
tcggtggtcg gtaaaacgcc tggtcagggt caggaaatta ttaaaggccg cctgaaaaaa      480
atggccaatc agccacaagt gatggtgctg ttggtgcaga ataatgcggc gaatgtgtcg      540
gtgattcgtg ctgggaatag tgtgctgatg ccgctgacgg cagccggtga gcgtgtgttg      600
gatgcggtgg ctgcggtagg tggttcaacg gcaaatgtgc aggatacga tgtgcagctg      660
acacgtggca atgtagtacg aactgttgcc ttggaagatt tagttgcaa tccgcgacaa      720
aatattttgc tgcgtcgcgg tgatgtggtt accatgatta ccaatcccta tacctttacg      780
tctatgggtg cggtggggag aacacaagaa atcggttttt cagccagagg cttatcgctt      840
tctgaagcca ttggccgtat gggcggtttg caagatcgcc gttctgatgc gcgtggtgtg      900
tttgtgttcc gctatacgcc attggtggaa ttgccggcag aacgtcagga taaatggatt      960
gctcaagggt atggcagtga ggcagagatt ccaacgggtat atcgtgtgaa tatggctgat     1020
gcgcattcgc tattttctat gcagcgcttt cctgtgaaga ataaagatgt attgtatgtg     1080
tcgaatgcgc cgttggctga agtgagaaa ttcttgctgt ttgtgttctc gccggttacc     1140
agtggcgcgca acagtattaa taatttaact aattaa                                1176

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&lt;210&gt; 14

&lt;211&gt; 391

&lt;212&gt; PRT

<213> *Neisseria meningitidis*

&lt;400&gt; 14

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Met Phe Lys Val Lys Phe Tyr Ile Arg His Ala Val Leu Leu Leu Cys
 1             5             10             15
Gly Ser Leu Ile Val Gly Cys Ser Ala Ile Pro Ser Ser Gly Pro Ser
      20             25             30
Ala Lys Lys Ile Val Ser Leu Gly Gln Gln Ser Glu Val Gln Ile Pro
      35             40             45
Glu Val Glu Leu Ile Asp Val Asn His Thr Val Ala Gln Leu Leu Tyr
      50             55             60
Lys Ala Gln Ile Asn Gln Ser Phe Thr Gln Phe Gly Asp Gly Tyr Ala
      65             70             75             80
Ser Ala Gly Thr Leu Asn Ile Gly Asp Val Leu Asp Ile Met Ile Trp
      85             90             95
Glu Ala Pro Pro Ala Val Leu Phe Gly Gly Gly Leu Ser Ser Met Gly

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WO 00/42191

PCT/EP00/00135

100	105	110
Ser Gly Ser Ala His Gln Thr Lys Leu Pro Glu Gln Leu Val Thr Ala		
115	120	125
Arg Gly Thr Val Ser Val Pro Phe Val Gly Asp Ile Ser Val Val Gly		
130	135	140
Lys Thr Pro Gly Gln Val Gln Glu Ile Ile Lys Gly Arg Leu Lys Lys		
145	150	155
Met Ala Asn Gln Pro Gln Val Met Val Arg Leu Val Gln Asn Asn Ala		
165	170	175
Ala Asn Val Ser Val Ile Arg Ala Gly Asn Ser Val Arg Met Pro Leu		
180	185	190
Thr Ala Ala Gly Glu Arg Val Leu Asp Ala Val Ala Ala Val Gly Gly		
195	200	205
Ser Thr Ala Asn Val Gln Asp Thr Asn Val Gln Leu Thr Arg Gly Asn		
210	215	220
Val Val Arg Thr Val Ala Leu Glu Asp Leu Val Ala Asn Pro Arg Gln		
225	230	235
Asn Ile Leu Leu Arg Arg Gly Asp Val Val Thr Met Ile Thr Asn Pro		
245	250	255
Tyr Thr Phe Thr Ser Met Gly Ala Val Gly Arg Thr Gln Glu Ile Gly		
260	265	270
Phe Ser Ala Arg Gly Leu Ser Leu Ser Glu Ala Ile Gly Arg Met Gly		
275	280	285
Gly Leu Gln Asp Arg Arg Ser Asp Ala Arg Gly Val Phe Val Phe Arg		
290	295	300
Tyr Thr Pro Leu Val Glu Leu Pro Ala Glu Arg Gln Asp Lys Trp Ile		
305	310	315
Ala Gln Gly Tyr Gly Ser Glu Ala Glu Ile Pro Thr Val Tyr Arg Val		
325	330	335
Asn Met Ala Asp Ala His Ser Leu Phe Ser Met Gln Arg Phe Pro Val		
340	345	350
Lys Asn Lys Asp Val Leu Tyr Val Ser Asn Ala Pro Leu Ala Glu Val		
355	360	365
Gln Lys Phe Leu Ser Phe Val Phe Ser Pro Val Thr Ser Gly Ala Asn		
370	375	380
Ser Ile Asn Asn Leu Thr Asn		
385	390	

&lt;210&gt; 15

&lt;211&gt; 807

&lt;212&gt; DNA

<213> *Neisseria meningitidis*

&lt;400&gt; 15

atgaatatga aaaaatggat tgccgccgcc cttgcctgtt ccgcgctcgc gctgtctgcc	60
tgccggcggtc agggcaaaga tgccgccgcg cccgccgcaa accccgacaa agtgtaccgc	120
gtggcttcca acgccgagtt tgcccccttt gaattcttag actcgaaagg caatgttgaa	180

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yycttcgatg tggatttgat gaacgcgatg gcgaaggcgg gcaattttaaa aatcgaattc 240
aaacaccagc cgtgggacag ccttttcccc gccttgaaca acggcgatgc ggacgttggtg 300
atgtcgggcg taaccattac cgacgaccgc aaacagtcta tggacttcag cgaccogtat 360
tttgaaatca cccaagtcgt cctcgttccg aaaggcaaaa aaatatcttc ttccgaagat 420
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aaactcttgg gcaacgacaa cccgaaaatc gcgcgctttg aaaacgttcc cctgattatc 540
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tatgtgaaaa acaatccgac caaagggatg gacttcgtta ccctgcccga cttcaccacc 660
gaacactacg gcatcgcggt acgcaaaggc gacgaagcaa ccgtcaaaat gctgaacgat 720
gcgttgaaaa aagtacgcca aagcggcgaa tacgacaaaa tctacgcaa atattttgca 780
aaagaagacg gacaggccgc aaaataa 807

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&lt;210&gt; 16

&lt;211&gt; 268

&lt;212&gt; PRT

<213> *Neisseria meningitidis*

&lt;400&gt; 16

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Met Asn Met Lys Lys Trp Ile Ala Ala Ala Leu Ala Cys Ser Ala Leu
1          5          10          15
Ala Leu Ser Ala Cys Gly Gly Gln Gly Lys Asp Ala Ala Ala Pro Ala
20          25          30
Ala Asn Pro Asp Lys Val Tyr Arg Val Ala Ser Asn Ala Glu Phe Ala
35          40          45
Pro Phe Glu Ser Leu Asp Ser Lys Gly Asn Val Glu Gly Phe Asp Val
50          55          60
Asp Leu Met Asn Ala Met Ala Lys Ala Gly Asn Phe Lys Ile Glu Phe
65          70          75          80
Lys His Gln Pro Trp Asp Ser Leu Phe Pro Ala Leu Asn Asn Gly Asp
85          90          95
Ala Asp Val Val Met Ser Gly Val Thr Ile Thr Asp Asp Arg Lys Gln
100         105         110
Ser Met Asp Phe Ser Asp Pro Tyr Phe Glu Ile Thr Gln Val Val Leu
115         120         125
Val Pro Lys Gly Lys Lys Ile Ser Ser Ser Glu Asp Leu Lys Asn Met
130         135         140
Asn Lys Val Gly Val Val Thr Gly Tyr Thr Gly Asp Phe Ser Val Ser
145         150         155         160
Lys Leu Leu Gly Asn Asp Asn Pro Lys Ile Ala Arg Phe Glu Asn Val
165         170         175
Pro Leu Ile Ile Lys Glu Leu Glu Asn Gly Gly Leu Asp Ser Val Val
180         185         190
Ser Asp Ser Ala Val Ile Ala Asn Tyr Val Lys Asn Asn Pro Thr Lys
195         200         205
Gly Met Asp Phe Val Thr Leu Pro Asp Phe Thr Thr Glu His Tyr Gly
210         215         220
Ile Ala Val Arg Lys Gly Asp Glu Ala Thr Val Lys Met Leu Asn Asp

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225                      230                      235                      240  
Ala Leu Lys Lys Val Arg Glu Ser Gly Glu Tyr Asp Lys Ile Tyr Ala  
                         245                      250                      255  
Lys Tyr Phe Ala Lys Glu Asp Gly Gln Ala Ala Lys  
                         260                      265